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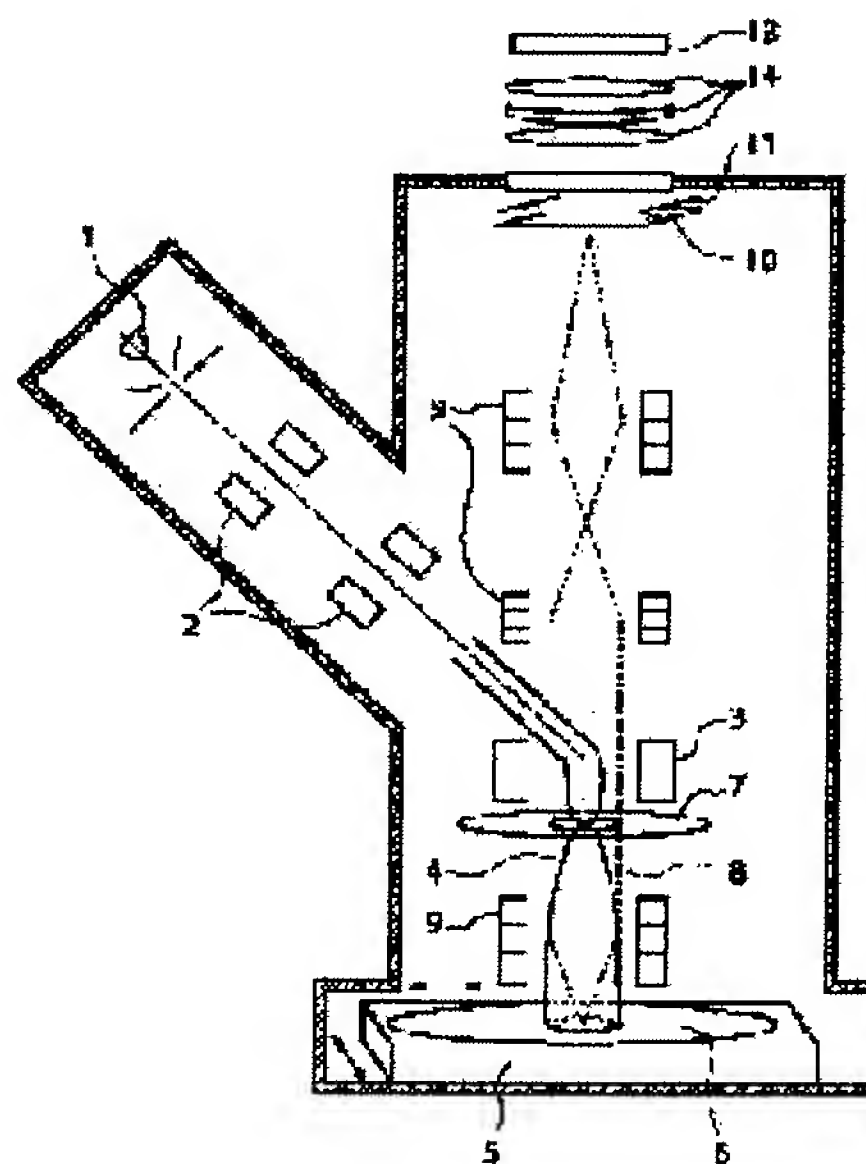
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### (54) MAPPING TYPE ELECTRON MICROSCOPE, SEMICONDUCTOR FLAW INSPECTION DEVICE AND MANUFACTURE OF SEMICONDUCTOR DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a mapping type electron microscope capable of suppressing the distortion aberration in a wide field of view and observing a sample with a high resolution.

SOLUTION: The electron gun 1 of this mapping type electron microscope emits an electron beam as a primary irradiation beam 4 to irradiate a sample 6 placed on a stage 5. From the sample 6, secondary electrons, backward diffused electrons, and reflected electrons 8 are generated. These electrons serve as two-dimensional electron signals and are magnified and projected by a secondary optical system 9 to form an image on an MCP sensor 10, which is converted into light by a fluorescent screen 11, passed through a photo mapping optical system 14, and irradiated on a TDI type CCD camera 13, in which a TDI array CCD is mounted. The optical system 41 is designed, so that the distortion aberration generated in the secondary optical system (electronic mapping optical system) 9 sets off the distortion aberrations generated in the photo mapping optical system 14. Thereby the total distortion aberration of mapping type electron microscope becomes small, and the sample can be observed with high resolution.



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